

### ABSTRACT

The present invention relates to an electric cooking hob having a plurality of heating elements distributed in matrix formation below a heat-resistant surface on which one or more cooking utensils can be located in random manner. The cooking hob being able to determine the location, form and dimensions of one or more cooking utensils positioned on the cooking hob. The cooking hob using a signal source, and able to process a signal from the signal source individually through the plurality of heating elements to determine which heating elements lie under the cooking utensil. The cooking hob also being able to heat the elements lying below the cooking utensil by a power source. Each heating element being able to be energized with a polarity opposite to the polarity of the current used to perform the determination, so that the power source and the signal source can be applied at the same time to different heating elements.